EDUCATIONAL SCREEN

The Magazine Devoted Exclusively to the Visual Idea in Education

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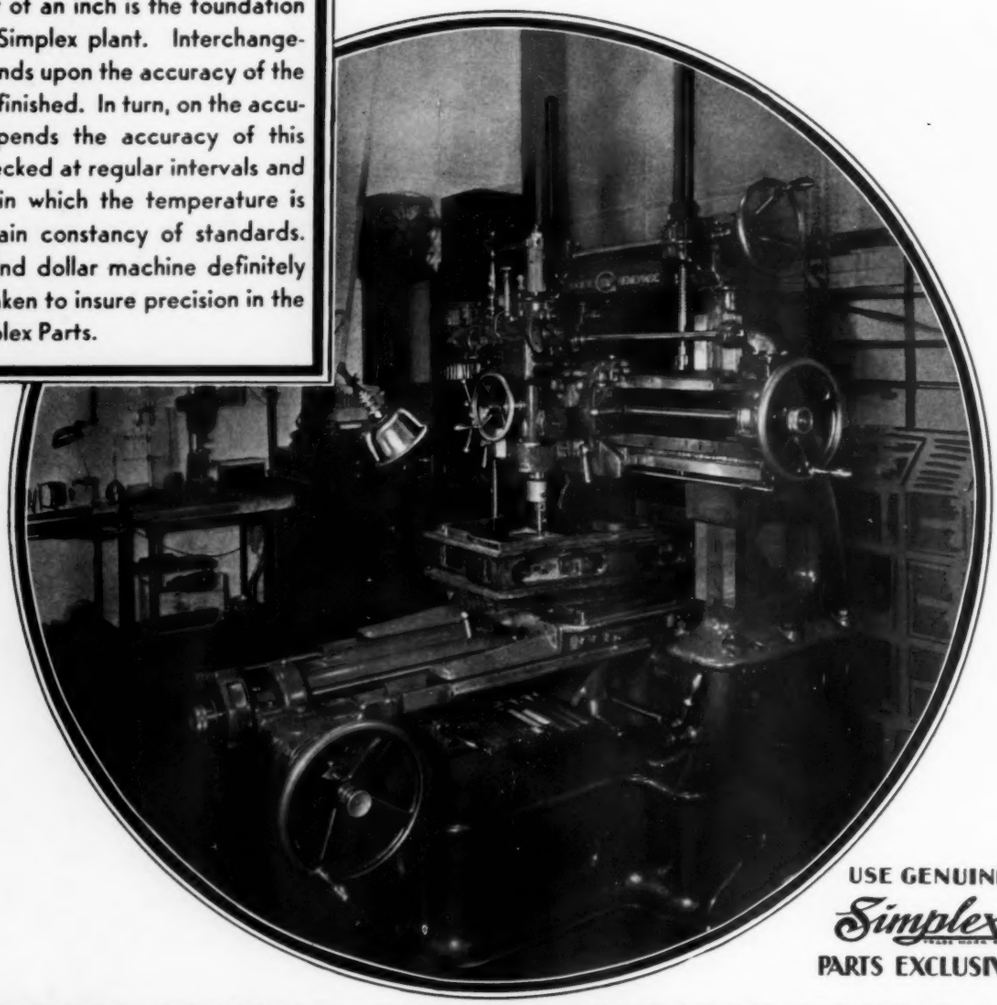

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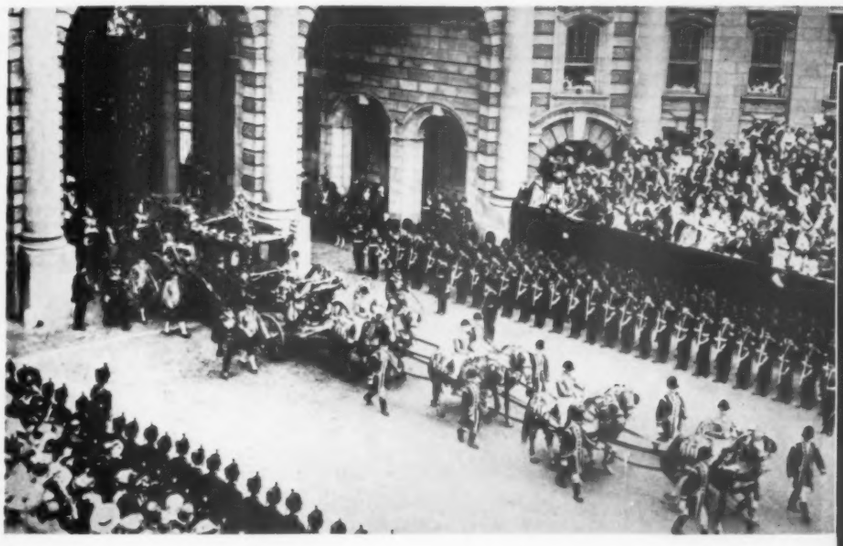

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The EDUCATIONAL SCREEN

MAY, 1937 VOLUME XVI NUMBER FIVE

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Teaching an Abstract Concept in Science By Means of the Motion Picture[1]

Presenting the results of a preliminary experiment in an out-of-the-ordinary teaching problem.

By DR. C. L. GUTZEIT
Formerly of Cornell University and University of Texas

IN A world of increasing number and variety of technical advances, a genuine understanding of science and its principles becomes increasingly necessary. It is no longer possible to reserve the teaching of these principles to the specialist in college or to pre-college training. Molecules, atoms, and electrons have become common words in the news of the day and the subject of curiosity and interest to everyone who reads the daily newspapers.

In spite of the fundamental nature of these concepts, which are the foundation of all physical science, the study of them has been reserved for the technically minded university student. Although molecular and atomic structure are generally mentioned in elementary textbooks of physics and chemistry, the teaching of the micro-structure of matter is beset with difficulties which are only partly solved in first year college science and attacked with little hope of solution at high school level or below. With sufficient persistence it is possible to force the terminology into the student's vocabulary for examination purposes, but there is very little real understanding of the concepts.

The teaching of molecular and atomic theory involves two closely related difficulties. Like all very fundamental and general inter-relating principles, the concepts are very abstract and foreign to the thinking processes of the untrained individual. Furthermore, the demonstration and technical elucidation of experimental evidence of the structure of matter are necessarily limited to specialists.

The teaching problem resolves itself into finding a method whereby accurate mental imagery may be conveyed. A verbal description is inadequate. The various pictorial devices used by the specialist and carried over into elementary textbooks are not only inadequate but actually misleading to the uninitiated. It is quite satisfactory to place a series of marks representing electrons about a central particle representing the nucleus, or to place a set of dots representing an outer shell of electrons about the symbol for an element, provided that the reader understands the arbitrary nature of the symbolism. As a teaching device, however, such pictures become pernicious misrepresentation. The static character of models renders them only slightly useful in atomic theory and totally ineffective for kinetic molecular theory.

It has been the opinion of the writer, who has had experience in the difficulties of presenting such material to college students, that the problem is primarily one of method of presentation and not of subject matter. The fundamental nature of these concepts suggests that they be introduced in the study of science as early as possible, rather than that they be postponed for advanced work. The presentation requires two characteristics which textbook or blackboard presentation fail to give: three dimensions and motion.

The motion picture enables one to depict the required motion, and the three dimensions by the use of perspective drawing in animated diagrams. In addition, it also permits one to superimpose theoretical interpretations on actual photography of experimental phenomena. The visualization of the theoretical principles removes their abstractness and makes them intelligible to the student at an earlier mental age than is otherwise possible. The motion picture should, therefore, be admirably adapted to the presentation of abstract concepts.

On this hypothesis an experiment was planned, using available films, to teach elementary molecular and atomic theory to college level and below until the lowest perception limit was reached. Circumstances prevented the experiment from being carried beyond the preliminary stages in high school chemistry and eighth grade science classes. Results which indicate successful teaching in the eighth grade show that the lowest perception limit had not been reached.

Subject Matter

Elementary molecular theory assumes a spherical form for molecules. Atomic theory was combined in the unit of instruction to indicate the arbitrariness of this assumption. The subject matter content of the film on atomic structure also suggested this combination.

Molecular Theory of Matter.[2] Erpi Picture Consultants, Inc., University of Chicago series; (1 reel, sound). This film introduces molecular theory as a plausible explanation of diffusion, and develops by means of a comparison of theoretical predictions and

[1]Taken from a paper delivered before the Alamo Section, Texas State Teachers Association, at San Antonio, Texas. Acknowledgment is made to the following in San Antonio Public Schools: Mr. Thomas B. Portwood, Assistant Superintendent in charge of the Secondary Division, Public Schools; Miss Emma Gutzeit, Director of Radio and Visual Instruction; Miss Kathora Remy and Mr. John W. Todd in whose classes the experiment was conducted.

[2]Loaned through the courtesy of Calpini, Inc., San Antonio, Texas, representative of Bell and Howell Company, from Erpi Picture Consultants, Inc.

experimental facts. It includes diffusion of gases in air and vacuum, pressure of gases as a kinetic phenomenon, liquefaction and evaporation, vapor tension and equilibrium, cooling due to evaporation, crystallization and melting, and the Browian movement.

Beyond the Microscope,[3] The General Electric Company; (1 reel, silent). This film presents in detail the mechanics of the electrolysis of water, including the structure of the hydrogen atom, the hydrogen molecule, the water molecule, ions and ionic reactions in the electrolysis of water, crystallization of water and microphotographs of snow crystals. The atomic theory pictured is the combination of the Bohr theory and the Lewis-Langmuir theory customarily used by the chemist in elementary theory of atomic structure.

Classes Used

Two senior high school chemistry classes and two eighth grade junior high school science classes were taught in parallel, a film group and a non-film group in each school. The age and ability of the two groups in each school were comparable and represented normal classes. Diagnostic tests could not be made because of lack of time, but evidence indicated little, if any, previous knowledge of the subject matter. Intelligence quotients were available for the eighth grade groups.

Teaching Method

For the motion picture groups, the film was introduced by a brief explanation and followed by a detailed class discussion. Appropriate comments and explanations were made during the showing of the silent film. Each film was shown twice on successive days, the film on molecular theory being presented first, and the final (fifth) day devoted to review. In the eighth grade glass, the review included a third showing of both films.

For the non-film groups, the discussion was patterned after the films. For molecular theory, the theoretical principles were introduced and the discussion followed the deductive reasoning given in the film. For atomic theory it was necessary to present the theoretical conclusions directly and without experimental proof. In both cases the discussion centered largely about blackboard diagrams.

The purpose of the experiment was to determine directly the perception ability by film and verbal teaching, following identical subject matter, so that no textbook was used. Specific applications were avoided as much as possible, and the discussion was held to the simplest applications suitable for lending experimental validity to the abstract, theoretical concepts. This is contrary to usual classroom procedure, and the restriction decreases learning effectiveness. As such, the results should be below normal for ordinary classroom teaching.

Tests Used

The nature of the subject matter makes it very difficult to use the standard type of objective tests. No tests have been devised for objective measurement of concepts involving motion. Verbal tests are entirely inadequate.

Three types of tests were chosen: multiple choice, true-false, and pictorial. Multiple choice tests favor textbook teaching, and since no textbook was used, these were of particular interest. True-false tests are reported to favor oral instruction and hence should favor the non-film group.[4]

The pictorial tests require special explanation. The non-film groups were taught by means of static diagrams patterned from the dynamic ones in the films, in order to make the presentation as uniform as possible in both groups. Since the concepts are essentially pictorial in character, these tests were anticipated to favor the non-film groups where both the presentation and tests involved static diagrams.

Each of the three tests covered both films, the questions alternating on each film.[5] Except for a few technical terms specifically applying to the phenomena and explained as a part of the presentation, terminology of the tests was chosen to avoid any vocabulary difficulties. Ten minutes was allowed for each test, and the tests were of such lengths that this provided ample time for completion. In this way the confusion and error of the ordinary "speed test" were avoided.

Results of Tests

Results are recorded for each film separately, "A" for *Molecular Theory of Matter* and "B" for *Beyond the Microscope*. The tests represent: I Multiple choice, II True-False, and III Pictorial tests. All question were given equal weight. Results represent the records only of those students attending the entire experiment.

Discussion of Results

Since the median grade for the eighth grade science class is considerably better than anticipated for satisfactory results the subject matter is definitely not beyond the conception range at this grade level. The method used is a severe one and the normal teaching procedure should give better results. An examination of the frequency distribution of error on the individual questions indicated that the tests were too simple to gauge the effectiveness of the teaching. The tests were designed to give median scores within the range of 40 to 75 for the junior and senior high school groups. It was expected that the tests would require modification before proceeding with further experimentation.

The non-film groups gave erratic results, as shown by a detailed examination of the test papers. This masks the superiority of the film groups. Absences due to assemblies, etc. seriously interfered with the experiment in the eighth grade groups.

True-false tests gave the most erratic results and favored the non-film groups. This is in accordance with

(*Continued on page* 150)

[3]Loaned through the courtesy of the General Electric Company, Dallas, Texas.

[4]For a discussion of objective tests as applied to film teaching, see Joseph J. Weber, *Visual Aids in Education*, (Mimeographed), The Educational Screen, Chicago, 1930. Chap. IX-XII., pp. 52-71.

[5]Complete sets of these questions may be obtained from the Director of Visual Instruction, Board of Education, San Antonio, Texas.

The Preparation of Educational Film Strips

Describing, with fully detailed directions, an interesting use of 16 mm. film for classroom teaching.

By LOREN C. SPIRES
Community High School, Carterville, Illinois

AS A device for the presentation of new material or as a means of providing more interesting and effective drill material, the teacher-prepared film strip is the peer of all. No doubt many schools, recognizing the merit of such teacher-prepared strip, have shunned its preparation because of the seemingly insurmountable difficulties to be overcome. Such fear is in reality groundless, as excellent results can be obtained at the first attempt if certain fundamental rules are adhered to. The procedure need not be at all complex.

In this article will be discussed the preparation of film strip on 16mm motion picture film. These strips may be projected with the ordinary class room motion picture projector, if it is set for still projection. The reasons for selecting the 16mm film are: ease of obtaining equipment, low cost of materials, and excellence of the resulting pictures. It should be clearly understood at this point, however, that the same method may be employed with 35mm film to be used with the regular film strip projector, the only difference between the two cases being the use of a 35mm miniature camera instead of the 16mm. These 35mm cameras are now obtainable at a relatively low cost.

To film the pictures a 16mm motion picture camera is used. And the simplest form of filming is to use one of the titling stands made for such cameras. These stands are provided with supplementary lenses which enable material to be filmed at a distance of about 8 inches from the camera, with the result that typewritten material can be used rather than large, hand printed titles. In case the school is not equipped with a motion picture camera, there can always be found an amateur movie maker in the community who will gladly cooperate with the school in the production of the film.

The film used is 16mm positive film, obtainable from any large camera supply house at a cost of about $1.25 for a 100 foot roll; enough to produce at least forty film strips of 50 frames each. It has speed enough for outdoor work and is well suited for reproducing line drawings and printed matter. This film does not come on light tight spools so must be handled in the dark by the light of a safe red lamp. The red frosted bulbs sold by electric or variety stores make excellent working lights for this type of film. When the film is taken from its metal container it should be wound on a camera spool for safe storage, as well as for insertion in the camera. The emulsion or dull side of the film must face the lens when the camera is threaded.

In the preparation of the material to be filmed, the teacher should make a carefully written sequence of the drawings and explanatory titles to be used. Each title or drawing is then transferred to a separate white card or strip of paper for photographing. All drawings should be in black ink, and a relatively new black ribbon should be used on the typewriter for printing the titles and explanatory legends. Hand printed titles may be used if desired, but it should be remembered that any irregularity in the print is magnified many times on the screen and small errors become large errors, as viewed by the audience. After printing, each card is numbered according to its place in the sequence and is then ready for filming. The actual filming should be done in bright sunlight.

In the filming procedure the camera is securely fastened to the titling stand and the lens stopped down to the correct stop for bright sunlight. The first title of the sequence is then placed in the titling easel and accurately centered. This is important as any variation of a printed line from the horizontal is very noticeable when projected on the screen. After properly centering the title, a single frame exposure is made. If the camera is not equipped with an attachment for making single exposures, a quick pressure and release of the starting button will do nicely. This motion can be quickly mastered by practicing it with the camera empty. When the first title has been filmed, these operations are repeated until all of the cards in the sequence have been photographed.

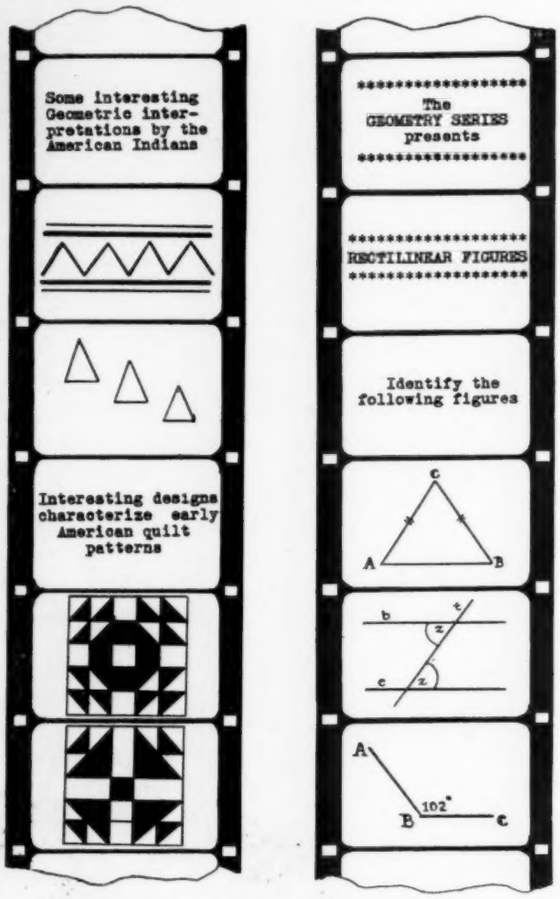
After making the last exposure of the sequence, the camera is taken into the dark-room, lighted by the red lamp, and the film is cut just above the film gate. The exposed strip may then be removed and is ready for development, the most interesting step in the procedure.

The development equipment consists only of two half-gallon jugs. These will serve as developing tanks as well as storage containers for the solutions after they have been used. If kept in tightly corked containers, the solutions may be kept in good condition for several weeks, and will develop at least 200 feet of film before becoming exhausted. Lacking two half-gallon jugs, glass fruit jars will make excellent developing tanks. The solutions may then be stored in tightly corked bottles.

In one of the jugs, place enough prepared developer —any kind of film developer will do—to make 64 ounces of solution. Fill the jug with water and stir until the developer is completely dissolved. Partially fill the other jug with water, and in it dissolve the contents of one package of acid-fixing powder (hypo), then add water until the jug is full. These are the only

solutions required in the developing process, and the directions given on the containers of the chemicals should be carefully followed as any variation from them may result in the failure of some of the chemicals to dissolve.

Development is carried on in the dark-room lighted by the red lamp. Grasping one end of the exposed strip, the film should be quickly immersed in the de-



Samples of School-Made Filmstrips

veloper. While in this solution, the film should be agitated occasionally to assure even development over the whole strip. This process should reach completion in about five minutes, after which the film is removed from the developer and placed in a tray of water. The water serves to remove the chemicals from the emulsion so that the fixing solution will not be contaminated. Ordinarily one minute will be enough time for this washing process. Examination of the film at this stage will show that the exposed parts have now turned black, leaving the printing and the margins white.

The film is taken from the water next and placed in the fixing bath, where the unexposed parts of the emulsion are removed, producing a transparency suitable for projection. Under ordinary conditions three minutes will suffice for the fixing process. After the film has been placed in the fixing bath the white light may be turned on in the room for further examination of the strip. Upon removal from this bath, all of the unexposed parts of the emulsion should have been removed and the parts should appear clear by transmitted light. Then the film should be washed in running water for about fifteen minutes. Thorough washing is very important at this stage, as failure to completely remove the fixing bath will result in discoloration of the finished strip.

After thorough washing, the film should be gone over with a bit of wet absorbent cotton to remove any foreign matter from the emulsion, then it should be hung up to dry. The strip will be dry enough for projection in from fifteen minutes to an hour, depending upon the temperature and moisture content of the air. The background should appear black and the letters and drawings should be sharply outlined against this background. This is a pleasing combination as viewed from the screen, and is perhaps the simplest combination of light and shadow for the beginner.

The process, as outlined above, may be used to reproduce printed material or line drawings, and can be adapted to practically any type of subject matter. It has been found especially useful in increasing the effectiveness of drill material in science and mathematics classes. It is also an interesting device for the presentation of new material. And its economical feature enables extensive film strip libraries to be built at a nominal cost.

Teaching an Abstract Concept in Science With Motion Pictures

(*Continued from page* 148)

the claims of Weber, that oral instruction is favored by the true-false tests. Pictorial tests favor film groups in spite of the greater similarity of the tests to the class presentation for the non-film groups compared to that given to the film groups. This result indicates a greater clarity of concepts obtained by the use of films.

The results of the multiple choice tests are of particular interest. The ratios of the percentile scores on these tests to the mental ages as calculated from the intelligence quotients gave nearly constant values for the individuals in each eighth grade group. The film group was approximately 25% superior to the non-film group. This result was qualitatively anticipated. Although the data are too meager for generalizations, this result is in accordance with the principle that the multiple choice tests are more nearly in accordance with the gains in general information than the true-false and pictorial tests.

A frequent objection to the introduction of abstract theory in science for the high school level or below is the lack of interest by the students. The abstract nature of the subject matter and treatment in no way interfered with the class interest in this experiment. The eager interest and attention were particularly evident in the junior school groups, both film and non-film groups.

The non-film groups were favored by the experience of the teacher in teaching abstract subjects without the use of visual aids. The average teacher in the secondary schools is not familiar with the technique of teaching this type of subject matter.

Both films used in this experiment offer unusual and valuable contributions to science programs in secondary schools as well as for the college level. It is obvious that the technique of presentation must be

TABLE OF MEDIAN PERCENTILE SCORES

Group	No.	I-A	I-B	I-All	II-A	II-B	II-All	III-A	III-B	III-All	A-All	B-All	Total	Age	I. Q.
Junior (Film)	15	73	55.5	60	67	40	52	87.5	75	83	65	48	60	13.8	100
School (Non-Film)	17	54.5	36	45	60	60	60	87.5	50	66.7	61	56	60	14.8	97.5
Senior (Film)	19	73	67	75	80	80	84	100	100	92	85	74	82.5	17.0	——
School (Non-Film)	13	64	35	65	80	67	72	87.5	50	76	65	51	68	16.7	——

different for the junior high, senior high and college levels, but the theoretical principles must be identical. These principles are adequately covered in the films, and the subject matter is sufficient for the greater part of the junior school treatment of this subject. For senior high school and college the films serve to introduce the material and to implant the correct fundamental principles.

Molecular Theory of Matter represents unusually excellent photographic treatment, but has the disadvantage that the film moves too rapidly. The sound is not a part of the phenomena represented, but the lecture is a well coordinated system of deductive reasoning. The verbal accompaniment to the film is too rapid and out of proportion to normal practice in lecture presentation of technical material. The film could also be used as a silent picture, with appropriate comments by the teacher. This would make it possible to decrease the running speed of the film and enable the use of individual frames as still pictures. An alternative would be to use the film as a sound picture for the first showing and as a silent film on a double action machine for subsequent review and detailed study. The latter method would combine the advantages of both silent and sound pictures.

Beyond the Microscope is unusually free from discontinuities caused by subtitles. For senior high school and college level the film requires amplification. By means of a set of drawings for slide or opaque projection, including not only the structure of the atoms, molecules and ions shown in the film, but also others, not included, it would be possible to construct a unit of study on this difficult subject superior to any at present available.

These films, in common with practically all technical teaching films, could be vastly improved if the producer furnished supplementary still pictures taken directly from the film and included as a part of the film teaching unit. These could be in the form of film strips, slides or prints, for opaque projection. The study of detail always requires still pictures which can be projected for an unlimited time. Devoting any considerable part of the motion picture to such stills is not only an expensive waste of film but is less satisfactory than the pictures specificially designed for still projection.

What the Supervisor Wants in Visual Education

By JOHN S. McISAAC

Department of Education, Geneva College, Beaver Falls, Pa.

VISUAL Education has now passed the stage of infancy in which it was looked on as a possible temporary innovation, and has demonstrated that it will grow up and to a fair size at that, but it is still in the adolescent period in which the characteristics of its mature development are not clearly discernible. It seems probable that those who have to do with it in various capacities can exert much influence on these characteristics if they but know in what direction this influence should be pointed.

Most of the courses in Visual Instruction in teacher training institutions have been the work of experts, such as directors of museums, in collaboration with interested school officials abetted by manufacturers of such devices as projection apparatus and motion pictures. While the course has only recently been added to the required list, and that in relatively few states, some work has been offered for several years and most school systems contain one or more staff members who have taken such a course.

Under these circumstances it seemed advisable to the writer to canvass supervising officials who had had an opportunity to observe diverse practise in visual instruction and secure their reaction regarding the relative efficiency of the different sensory aids. A check list involving most of the aids in common use and some not so common was made up and divided into two parts: 1) knowledge and information about sensory aids, 2) techniques and skills in their use. The list contained a total of seventy-five items relating to sixteen different devices as well as an inquiry as to the means approved by the official for giving instruction in visual education.

Each item of the check list was followed by six responses as follows:

5—should be mastered and overlearned for permanency.
4—should be stressed above average.
3—should be given average emphasis.
2—should have casual inclusion, less than average emphasis.
1—should have mere mention.
0—should be ignored or omitted.

The check lists were sent to some seventy superintendents, principals, and supervisors of instruction in three states, in the service area of the college with

which the writer is connected. Some forty responses were secured although a few of these pled lack of contact as an excuse for not checking the lists in full. While the number is not large enough to make the findings completely unassailable it is sufficient to permit some statistical treatment and the comparison of the averages of two chance groups within the list showed a close correspondence and high correlation.

The returns showed a definite majority in favor of a special course in visual instruction rather than stress in subject matter or special methods courses.

"I believe that teacher preparation in the use of sensory aids should be done in special methods courses in particular fields"—22%

"I believe that teacher preparation in the use of sensory aids should be done in the content courses in the various fields"—25%

"I believe that teacher preparation in the use of sensory aids should be done through a special course in visual education"—53%

The second finding was that, as a class, knowledge and information is rated more important than techniques and skill. The difference in the rankings was nearly six times their probable error denoting certainty that a real difference exists.

A third observation was that the more common and familiar devices such as maps, blackboards and graphs are rated more important than the more technical ones often thought of first when visual education is mentioned. The ranking of the ratings is appended.

Information and understanding about—

1. Maps and globes
2. Blackboards and bulletin boards
3. Graphs and charts
4. Teacher training programs
5. Research experiments
6. Exhibits and museums
7. Motion pictures
8. The school journey
9. Flat pictures
10. Dramatization and pageants
11. Administrative programs
12. Lantern and film slides
13. Radio
14. Projection

Techniques and abilities in dealing with—

1. Graphs
2. The school journey
3. Specimens
4. Blackboard
5. Motion pictures
6. Dramatization
7. Sand table
8. Flat pictures
9. Lantern slides
10. Maps and globes
11. Models
12. Projectors
13. Photography
14. Electric "Maps"
15. Screens
16. Puppet shows

Realizing that more extensive development may change the relative emphasis on some of these topics, we offer this brief study as of possible interest to those concerned with conditions as they exist today and desirous of guiding the future progress of visual instruction into more valuable channels.

Summer Courses in Visual Instruction

Institution	Title of Course	Instructor
Alabama		
Alabama Polytechnic Institute, Auburn, June 8-July 16	Visual Instruction	M. L. Beck
California		
University of Southern California, Los Angeles, June 21 . . .	Fundamentals of Motion Picture Production; Motion Picture Story and Continuity.	B. V. Morkovin
	Social Psychological Aspects of Motion Pictures	M. Metfessel
	Audio-Visual Education	Sarah Mullen
	Methods of Teaching the Use and Appreciation of Educational Films and Radio Programs	Sarah Mullen
State College, San Francisco June 21	Photography	S. Morse
Colorado		
State College of Education, Greeley, June 21-July 16	Visual Aids in Education	Helen Davis
University of Colorado, Boulder June 21	Visual Aids	Lelia Trolinger
	Education through Motion Pictures	Lelia Trolinger
University of Denver, Denver	Visual and Auditory Aids	E. H. Herrington
Florida		
University of Florida, Gainesville June 14	Visual Education	W. L. Goette
Georgia		
University of Georgia, Athens June 17	Visual Aids in Education	T. R. Wright
Illinois		
Northwestern University, Evanston, June 21-Aug. 14	Visual Aids and Radio in Education	Paul C. Reed
State Normal University, Normal June 12	Visual Education	C. L. Cross
University of Illinois, Urbana June 21-Aug. 14	Visual and Auditory Instructional Aids	Louis Astell
Indiana		
Purdue University, Lafayette, June 14	Visual Education	H. A. Henderson

Institution	Title of Course	Instructor
Iowa		
Iowa State College, Ames, June 16	Lecture-Discussions on Visual Aids	H. L. Kooser
Kansas		
University of Kansas, Lawrence June 8	Visual Education in Elementary and Secondary Schools	FredMontgomery
University of Wichita, Wichita June 7	Visual Sensory Aids in Teaching	W. A. Bonwell
Kentucky		
University of Kentucky, Lexington June 14	Visual Instruction	Louis Clifton
Maryland		
University of Maryland, College Park, June 23 . . .	Visual Education	Henry Brechbill
Massachusetts		
State Teachers College, Fitchburg, July-August	Visual Aids in Education	C. W. Erickson
Minnesota		
State Teachers College, Moorhead, June 14 . . .	Supervision through Visual Aids	C. P. Archer
State Teachers College, Winona, June 14 . . .	Visual Instruction	Ella C. Clark
Missouri		
Teachers College, Kansas City, June 14 . . .	Methods in the Use of Visual Aids	Rupert Peters
New Jersey		
State Teachers College, Montclair, July 5 . . .	Visual Instruction	E. W. Crawford
State Normal College, Trenton, July 5 . . .	Visual Instruction	Geo. W. Wright
Rutgers University, New Brunswick, July 5 . . .	Visual Instruction	L. R. Winchell
New York		
New York University, New York City, July 5 . . .	Visual and Auditory Materials in the Social Studies	D. C. Knowlton
	Laboratory Courses in Visual Aids	John Shaver
	Practical Applications of Visual Aids	John Shaver
Teachers College, Columbia University, July 12-Aug. 20	Materials and Methods in Visual and Auditory Education;	Fannie Dunn V. C. Arnspiger C. M. Koon
	Research in Visual and Auditory Education	Fannie Dunn V. C. Arnspiger C. M. Koon
Chautauqua Summer Schools, Chautauqua, July 5 - Aug. 13	Laboratory Course in Visual Aids	G. H. O'Donnell
Ohio		
Ohio State University, Columbus, June 21 . . .	Visual Aids	Edgar Dale
Western Reserve University, Cleveland, June 21 . . .	Institute of Visual Education	W. M. Gregory and others
Oklahoma		
A. & M. College, Stillwater, May 31 . . .	Visual Education	J. C. Muerman
Texas		
University of Texas, Austin, June 8 . . .	The Use of Visual Aids in Education	B. F. Holland
Wisconsin		
State Teachers College, Platteville, June 14 . . .	Visual Instruction	V. M. Russell
State Teachers College, Stevens Point, June 14 . . .	Visual Instruction	C. D. Jayne
Stout Institute, Menomonie, June 22 . . .	Visual Instruction	Paul Nelson
University of Wisconsin, Madison, June 28 . . .	Visual Instruction	J. E. Hanson
Wyoming		
University of Wyoming, Laramie, June 15 . . .	Radio and Visual Education	Cline M. Koon

Pennsylvania

The following teacher-training institutions will give courses in Visual Education. As complete information was not available in time for this issue, we present only a partial list of instructors of such courses.

Albright College, Reading
Allegheny College, Meadville
Beaver College (J. E. Malin) Jenkintown
Bucknell University, Lewisburg
College Misericordia, Dallas
Drexel Institute (Mr. Galphin) Philadelphia
Elizabethtown College, (E. Wenger) Elizabethtown
Geneva College (J. S. McIsaac) Beaver Falls
Gettysburg College, Gettysburg
Grove City College, Grove City
Immaculata College, Immaculata
Juanita College (Paul Rummel) Huntington
LaSalle College, Philadelphia
Lehigh University, Bethlehem
Marywood College (S. M. Sylvia) Scranton
Mercyhurst College, Erie
Muhlenberg College (H. E. Miller) Allentown
Penn. State College (H. E. Thompson and J. G. Sigman) State College
Rosemont College, Rosemont
Seton Hill College, Greensburg
St. Thomas College, Scranton
Susquehanna University, Selinsgrove
Temple University (J. T. Garman) Philadelphia
Thiel College, Greenville
University of Pennsylvania, Philadelphia
University of Pittsburgh (Mr. E. E. Sechreist), Pittsburgh
Villa Maria College, Erie
Villanova College, Villanova
Washington & Jefferson, Washington
Waynesburg College (C. O. Riggs), Waynesburg

State Teachers Colleges at
Bloomsburg
California
Clarion
East Stroudsburg
Edinboro
Indiana (W. E. Emmert)
Kutztown
Lock Haven
Mansfield
Millersville
Shippensburg
Slippery Rock
West Chester
Cheyney Training School

AMONG THE MAGAZINES AND BOOKS

Conducted by Stella Evelyn Myers

The School Executive (56: 309-310, April '37). "Large Scale Use of Visual Aids", by J. Ralph Schaffer, Baltimore.

The use of visual aids is apt to be an "extra performance" rather than a teacher's aid in the classroom. This attitude indicates a need to fit the visual materials more effectively into the course of study. The first step in this direction would be to determine the visual aids required for a particular course of study. This work might be done by specialists in subject-matter, in visual aids and the sources of materials, and experienced classroom teachers. The major and minor objectives for each unit should be considered, and the particular aid that would be most useful in meeting each objective should be decided upon, and listed with source and prices for purchase and rental. If gaps appear in such a visual correlation, suggestions should be made for new visual aids to be produced. Teachers should be provided with directions for the use of the aid for a particular lesson. If requests were commonly made for visual aids for a whole course, rather than for separate programs, producers would, no doubt, attempt to supply such materials by courses.

The plan for cooperation among schools in the use of visual aids seems almost imperative in order that costs may be reduced. The writer seems to have an exaggerated idea of the difficulty and the expense of fitting each classroom for projection lessons. He recommends the plan, which seems to work more efficiently and with perhaps no more loss of time, of each school having a room set aside for projection purposes with all stationary equipment always in place.

When the mass of detail involved in booking, obtaining, and using visual materials is considered, it seems unwise to place this load on the teachers. "For purposes of efficiency and economy this work should be assigned to one person, a director of visual education. This director would be responsible for supplying the visual education needs of the school and for the operation of the projection room. "This expense for visual equipment must be thought of in the terms of: *Can we afford to do without it?* . . . Perhaps more advertising is needed to convince boards of education of the fact that visual aids are an important complement to the teacher and deserve an expenditure in comparison to their worth in the whole teaching process."

Film Progress, London (2: 5-10, Jan. '37). "The School Film, What Is and What Should Be," by Bruce Beddow. (The London editor states that he publishes this article because of the number of live issues that it raises.)

The serious business of bringing the film into the classroom has been badly mismanaged, because in the main it has not been managed by educators. It is suggested that an Education Film Council be formed to direct and co-ordinate the work of lesser bodies. Brains, imagination and enthusiasm must be required of all applicants for positions on the Council, or the lesser bodies. Also, the candidate must have sufficient classroom experience to give first-hand knowledge of the mentality of the elementary and secondary school child.

The Council should appoint a Subject Committee for each school subject and each of these subject committees would divide into sub-committees for three age levels. The History Committee with the knowledge and approval of the Council would pass on to the Junior History Sub-Committee certain terms of reference for a series of films to be produced. The correct approach, the 'atmosphere' to be attempted, and the actual teaching facts would be listed. Not until this stage of the procedure, should the film director be approached. "As for the films now in existence, a few could be 'cut' and embodied in the scheme, but the mass should be solemnly burnt next April Fool's Day." As to sound, the English educator says, "When I see apple orchards in Kent I do not want to listen vaguely to a mawkishly jocular voice—coming from nowhere to tell me how the apples are packed: let one of the workers look up and speak to me in his own good Kentish dialect and I will accept him and his explanation as natural things. So that I think that what the teacher resents is not the sound film, but the voice of the too explicit commentator."

The Journal of the National Education Association (26: 91-92, March, 1937). "The Outlook for Films in Education," by Charles F. Hoban, Jr.

A most enlightening article on the general status of the visual field for education is presented under the headings: "Production Activities," "Distribution," and "Increased Use." The writer proclaims that a new surging of interest and activity in these three fields is everywhere evident. The thought of this long-desired synchronization is most stimulating. The lamented limitations to learning are overcome by means of an interesting and understandable pictorial presentation. The world comes into the classroom and speaks even to the retarded child, instilling truer attitudes, enriching knowledge, and motivating skills.

Educational films are being produced by educators, as is fitting, by industrial and commercial organizations to make explicit their own processes and products, and by certain federal departments. Distribution is being carried on by several state departments of education, at least 28 university extension bureaus, and teacher-training institutions that have developed circulating film libraries. There

(*Concluded on page* 156)

NEWS AND NOTES *Being brief notations on significant doings and events in the visual field.*

Conducted by Josephine Hoffman

Free Source Material

Under the guidance of Mr. Lester M. Bruce, Chairman of the Social Science Committee of Teachers, in the New Providence Public Schools, New Providence, New Jersey, a 10-page publication "Materials of Instruction in Social Science," has just been issued. This first number contains over one hundred sources of free posters and publications. Copies may be secured free of charge by writing to George W. Wright, Supervising Principal, New Providence, New Jersey.

Bureau of Mines Films Shown to 7,000,000

A total of 7,252,000 Americans learned something of how minerals are produced and utilized through attendance at the showing of the educational motion picture films of the U. S. Bureau of Mines, Department of the Interior, during the year 1936. The films, covering 57 different subjects, were exhibited on 84,783 occasions, the attendance figures exceeding those of any previous year. Approximately 500 reels were added to the Bureau of Mines motion-picture library during the year, making over 3,000 reels available for distribution. The cost of producing the films is borne by cooperating industrial concerns. The films are used by educational institutions and engineering societies throughout the country. Some of the films have actually been made a part of prescribed courses in certain colleges.

High Lights of Visual Conference

Advance information has been furnished us by the officers of the DeVry National Conference on Visual Education. Dr. I. E. Deer will show the latest films in *The Secrets of Success* series. L. W. Cochrane, University of Iowa, will exhibit color films made at the University. Supt. Hamilton of the Oak Park Schools and William G. Hart of the Fordson Schools at Dearborn, Michigan, will show films of school activities. The National College of Education at Evanston has done some interesting filming that will also be presented. A. E. Holleman of the Shell Petroleum Corporation, who has made an outstanding contribution to scientific testing for film training in salesmanship, will present further studies made on this subject, and will exhibit a striking new film. Miss Alma Rogers, organizer of the County Cooperative Film Service of St. Louis County, will report on the progress of this unique organization. A similar county film service along original lines will be described by County Supt. H. E. Ryder of Sandusky County, Ohio. Supt. Rilling of Anna, Ohio, will present the remarkable way in which a Public Address System enabled him to continue the work of his schools, after the recent earthquake destroyed their school buildings. There will be an illustrated lecture on a 6000-mile tour of Soviet Russia by Supt. F. E. Hewitt of Washington, Kansas. James Henry White, who delighted audiences at the New Orleans meeting of The Department of Visual Instruction, will show his fascinating pictures on China. Bertha Rachael Palmer will present the new film of the National W. C. T. U., *The Beneficent Reprobate. Forest Treasures* will be presented by the Veneer Association. A number of new Government films will be shown, including glimpses of C. C. C. Camps at work. Raymond Evans, Chief, Division of Motion Pictures, U. S. Department of Agriculture, will discuss the work of his department and present *In the Beginning*, a new film depicting the genesis of mammalian life. Many industrial firms will also present their latest films.

The program is far from complete, but promises to be one of exceptional interest. The Conference meets this year June 21 to 24, inclusive, and will be held in Chicago at the Francis W. Parker School.

School Reports on Peace Film

The anti-war documentary film, *Dealers in Death*, exposing the munitions racket, was shown to an assembly of students and teachers at John H. Francis Polytechnic High School, Los Angeles, and the reports gathered from the group after the showing testify to the effectiveness of the film's appeal for peace. A few of these reports are quoted below verbatim:

Questions:

1. Do you feel this is a picture that should be shown to high school students?
2. Please explain your vote.
3. Give a short evaluation of this program.

Answers:

Secondary Principal:

1. Yes.
2. The reaction of the students was good. They were obviously affected. Attitudes changed, yet not emotionally debauched.
3. Artistically poor.
   Dramatically medium.
   Intellectually fine.
   Emotionally O. K.

High School Teacher:

1. Yes.
2. I believe that high school students should see this picture. As the future citizens of the U. S. they should know the causes of war and who causes them. We must develop the hate of war in students as early as possible.
3. The horrors of war caused by the greed of a few munitions makers who do not care how many people are slaughtered and their methods of propaganda, are fully explained without fear. Only through the education of people to the horrors and truth of war can we outlaw it. The enormous amount of money

spent for rearmament has involved most of the world in a siege of hunger and starvation. I believe this film has shown me more of the horrors of war than I could ever hope to learn in books. I heartily endorse this film not only for high schools but for colleges as well.

Student (President Scholarship Society):

1. Yes.
2. The boy or girl of high school age needs just such facts as these brought before him in order to change war from an adventure to a disaster in his eyes.
3. Some of the scenes are exceedingly gruesome, and yet, I think something authentic as this is needed to bring out the point of war as a tragedy. The facts brought into the picture are interesting, because none of these things are given in newspapers of today. We need something like this to awaken the youth of today.

High School Student:

1. Yes.
2. I feel that this picture should be shown to high school students because when they are this age they are old enough to understand the grim realities of war and young enough to turn this knowledge towards channels of peace.
3. This program showed very clearly just how futile war is. Many millions of lives are lost because of the inhuman avarice of the munitions manufacturers. The cost of war is brought out most clearly, I think, by the fact that for every soldier that is killed $25,000 is spent. Another startling fact was the comparison of the money wasted on destruction and the same money that could have been spent to build colleges and libraries, and provide millions of homes for the impoverished. I think it would be very wrong not to show this picture because if we want peace we must first show the horrors of war.

This film, which is handled by Garrison Film Distributors, has been endorsed by the U. S. Senate Munitions Investigation Committee. It was produced with the editorial advice of Professor Walter B. Pitkin. Its author, Burnet Hershey, is a famous war correspondent who served the New York Times with the American Expeditionary Forces during the World War and was later attached to General Pershing's Headquarters.

School Gives Photography Course

A course in photography is given at Lehigh University, Bethlehem, Pennsylvania, in connection with the regular journalism instruction at the school to candidates for posts on the student newspaper. So great has been the response that the class had to be divided into two sections. With the purchase of a miniature camera and the setting up of a regular darkroom, the semi-weekly news photographers were ready to go to work. The instruction includes mastery of developing and printing and of what it takes to make pictures under the varied conditions which newspaper photographers face.

Among the Magazines and Books

(*Concluded from page* 154)

are 97 full-time directors of visual education in the United States, and 230 part-time instructors. Additional film catalogs are helping in increased use of appropriate films. Teachers are being trained in film projection and teaching techniques, over 300 teacher-training institutions offering courses dealing with the motion picture in education. In fact, by surveys, publications, and conferences, this organization is attempting to serve as a clearinghouse of educational information in the field of the film.

Science News Letter (31: 179-180, March 20, '37) "Microfilm Hailed as New Way to Duplicate Books, Pictures," by Watson Davis.

This library wonder-worker, enabling a reader to carry the contents of five large books in his vest pocket, while the librarian both lends and retains a copy of each book, is helpfully illustrated. At home, the book is read from a translucent screen. Six pages of a book are reproduced on microfilm about one by five inches in measurement. If the microfilm images can be reduced to one-fourth of their present size, a book of 240 pages can be produced on film the size of the usual cataloguing card. A whole library would then require no more room than the space now occupied by the card catalogue.

Science (85: 240-242, March 5, '37) "Dissemination of Scientific Literature by Means of Microfilms."

This scientific article, less popular in style than the preceding article, contains suggestions that should be very helpful to librarians when the stage of cataloging microfilms is reached.

Sierra Educational News (33: 21-23, Jan., '37.) "Cinema Report-Card," by Raymond Gruner.

Cinema Report-Cards as designed for an Elementary School are described with six points for children's rating. What plays made the greatest impression is indicated, and also how good or bad the pupils thought them to be. The total findings are re-produced for 1936 with the child's own point of view told in his own expressive manner.

Building America—Steel (2: 31 pp, Feb., '37) The story of steel is one of the most romantic of the fourteen stories published to date in the series, "Building America." The development of the industry from the early crucible to the Bessemer converter and the open hearth process is presented in word and picture. The fascinating steel network of the Great Lakes Region is traced from the fluctuating compass of William Burt in Northern Michigan (1844) to the busy hives where half a million men are the workers. The romantic stories of Carnegie and Gary are delineated with their respective policies. The organization of large corporations and monopolies and the Sherman Anti-Trust Law are treated. The history of welfare work by the companies, and the organization of labor unions are clearly analyzed. As far as the economic foundation of the reviewer extends, the account is perfectly straight-forward and told with a great desire to present both the labor and managerial sides with absolute truth and justice.

THE DEPARTMENT OF VISUAL INSTRUCTION OF THE N. E. A.

ATTENDANCE prospects grow steadily brighter for the coming Department sessions in Detroit, June 28 to 30, held concurrently with the annual meeting of the N. E. A. With the invaluable assistance of W. W. Whittinghill, Director of Visual Education in the Detroit Schools, acting as our efficient Chairman of Arrangements, most desirable accommodations have been secured for the occasion.

The Fort Shelby Hotel is official Department Headquarters, where our scheduled luncheons will be held, and where there are still rooms available for our members *who write the hotel promptly for reservations.* Our meetings will take place just across the street from the Fort Shelby in the beautiful auditorium of the new WWJ Broadcasting Studios. Seldom has the Department enjoyed such ideal arrangements for its periodic get-together.

PROGRAM

Detroit Meeting, June 28 to 30, 1937

Department Headquarters—Fort Shelby Hotel

Assembly Programs, in WWJ Broadcasting Studio

Local Chairman of Arrangements, W. W. Whittinghill, 9345 Lawton Avenue, Detroit. (Send luncheon and hotel reservations direct to him).

FIRST DAY (Monday, June 28)

12 Noon—Registration Luncheon (Crystal Ball Room, Fort Shelby Hotel)

Address of Welcome
Guest Speaker, Frank Cody, Superintendent of Detroit Schools

Overview of Detroit Visual Program
Manley E. Irwin, College of Education, Wayne University, Director, Division of Instruction, Detroit Schools

2 P. M.—Afternoon Program (WWJ Auditorium)

Immediate Needs in Visual Instruction
F. Dean McClusky, Director, Scarborough School, Scarborough, N. Y.

State Wide Visual Work in Indiana
F. L. Lemler, Secretary, Bureau of Visual Instruction, Indiana University

Complete Learning through Visual Aids in Physics
O. S. Anderson, Physics Department, High School, Fargo, N. D.

The Motion Picture in the Learning Process
W. M. Gregory, Director, Educational Museum, Cleveland Public Schools

Recent Trends in Use of Cinema in Education
Panel discussion led by John A. Hollinger, Director, Department of Visualization, Pittsburgh Public Schools.
(Showing of selected educational films)

SECOND DAY (Tuesday, June 29)

12 Noon—Conference Luncheon (Fort Shelby Hotel)
(for Department Members only)

Considerations on the Present and Future of the Department
Nelson L. Greene, President of the Department of Visual Instruction

Showing of new film, "Child Safety in Traffic", for discussion by members
Don Carlos Ellis, Treasurer, Metropolitan New York Branch of the D. V. I.

2 P. M.—Afternoon Program (WWJ Auditorium)

The Teaching of Wild Life near Home
Frank S. Gehr, Yonkers, N. Y.

Lantern Slide Technique in Geography Instruction
Villa B. Smith, Lecturer in Geography, Western Reserve University

Seeking New Educational Objectives through Use of Films
Edgar Dale, College of Education, Ohio State University

Teacher Participation in Educational Film Production
(Panel Discussion following)
Charles A. Gramet, Franklin K. Lane High School, Brooklyn, N. Y.
(Showing of selected educational films)

THIRD DAY (Wednesday, June 30)

1:30 P. M.—Afternoon Program (WWJ Auditorium)

Essential Qualities for an Educational Film
Esther L. Berg, Public School 91, New York City

Second Showing of "Child Safety in Traffic" for audience discussion
(Showing of selected educational films)

Business Meeting
Election of Officers, New Policies. Adjournment.

WITH such a meeting in prospect, our membership should keep pace. The June issue of THE EDUCATIONAL SCREEN will print the third Roster of Paid Members. As before, no member expiring previous to June can be included unless his $2.00 renewal is received before June 1st. Your expiration date is shown in the November or February rosters. February showed increase over November. June should show a still greater increase over February. It all depends on you!

Special significance will attach to the June Roster. It is planned to make it merely the "charter nucleus" of the greater Department that is to come. A new number (from 1 up as far as the roster goes) will be assigned each member, a new membership card issued, and that number will be permanent for that member. Non-renewal will merely drop the number, leaving a permanent gap in the member series. In future rosters, then, the member number itself will be an automatic index of seniority in the Department, the lowest numbers indicating permanently the "charter nucleus".

Let's make this "nucleus" at least 500, and give the new officers to be elected this June something to build upon as a real foundation. It all depends on you!

FOREIGN FILMS FOR EDUCATIONAL INSTITUTIONS

Conducted by Wesley Greene

COLLEGE foreign film showings may be classified in the main under two headings: those arranged to serve broad cultural interests and those promoted by specific language groups. In the former group are such programs as those sponsored by the Film League of Nashville, International House (Chicago), the student-conducted Art Cinema League of the University of Michigan, and the University Theatre at the University of Wisconsin. In the latter group are the French programs sponsored by the French Talking Films Committee of Cambridge, Massachusetts, and the occasional showings sponsored by language instructors interested in only one subject.

In this issue we are pleased to have an account of the work of the Film League of Nashville, to illustrate the successful presentation of foreign films designed for those with a multiplicity of cultural interests. In the next issue we shall have an account of a leading film group specializing in one language.

Film League Of Nashville

By FRANCES NEEL CHENEY

Librarian of Vanderbilt University and Secretary of the League

THE Film League of Nashville, organized in 1932 by Thomas Dabney Mabry for the study of the history and development of film art, offers to those genuinely interested in the motion picture an opportunity to see and study films whose nature is too special for popular appeal and which would not otherwise be shown in Nashville. The films are drawn from three sources: foreign films which would never be exhibited in commercial theatres, films made by individuals in America and elsewhere which are concerned with the experimental and technical side of the cinema, and memorable American and continental films which may be revived for historical study.

The twelve films shown in one season are divided into groups of three or four each, according to language. In this way college students can obtain a French or German membership if they are not interested in the whole series. This is a non-profit making organization and the membership is of three kinds: a minimum membership of four meetings for $2.00, a sustaining one of twelve meetings for $5.00, and a student membership of three meetings for $1.00.* Members may obtain guest cards for fifty cents each.

The group is made up of students and townspeople, and meets every other Sunday evening at a commercial theatre which is rented for the purpose. A union operator is used and the films exhibited are shipped back the same night of the showing. Each member is notified three days before the meeting by a postcard which gives the name of the film with a brief resumé or critical note. This supplements the printed program which is issued at the beginning of each season. The membership has grown more varied from year to year.

The task of selecting films, however, becomes increasingly difficult. In the beginning, there were any number of classics such as *Potemkin, Le Million, Zwei Herzen im 3/4 Takt, Maedchen in Uniform* to choose from. But by showing three of the best English, French, German, and Russian films each year the supply of old films has been exhausted; and it is now necessary to show the current year's releases, which cost more and thus require a larger membership. This year, for instance, the League has seen *The Eternal Mask, Crime et Chatiment, Gypsies, Janosik,* and hopes to close the season with *La Kermesse Heroique.*

Very little effort is made to please the whole group even though the films are chosen by a committee which is often advised by the faculty of Vanderbilt University. For example, some of the members are widely enthusiastic over Rene Clair, others are bored. Some consider *The Passion of Joan of Arc* the best film they have seen, others think it desecrates a lovely legend by having Joan appear so ugly and unkempt.

It is impossible to determine the group reaction to certain films in advance of the showings. At the showing of *Madame Bovary* the student element was very rowdy and laughed uproariously at the wrong time. However, this sort of thing does not happen often.

There has been no difficulty with showing Russian and German films as the League is well established as a non-partisan organization. There has been no cry of its furthering communism by showing *Potemkin* or *Gypsies.* In the German language, *Emil und die Detektive, Blue Light* and *Der Hauptmann von Koepenick* naturally have given no cause for criticism.

We have found that English titles with the films are essential and so far only *Emil und die Detektive* has been shown successfully without them. When no English titles are available, it is necessary to have introductory remarks by someone and this is far from satisfactory. We suggest that distributors equip their films with better English titles and that these titles hide no more than a third of the screen at the worst.

The increasing number of film bureaus such as the International Film Bureau and the New Film Alliance greatly simplifies the selection of only the best films. The League looks forward to closer cooperation with organizations which realize its needs and which can act as clearing houses for the sort of information desired.

*It is interesting to note that the subscription idea failed miserably when tried four years ago at International House, Chicago. Apparently some groups like the idea and some don't.—WESLEY GREENE.

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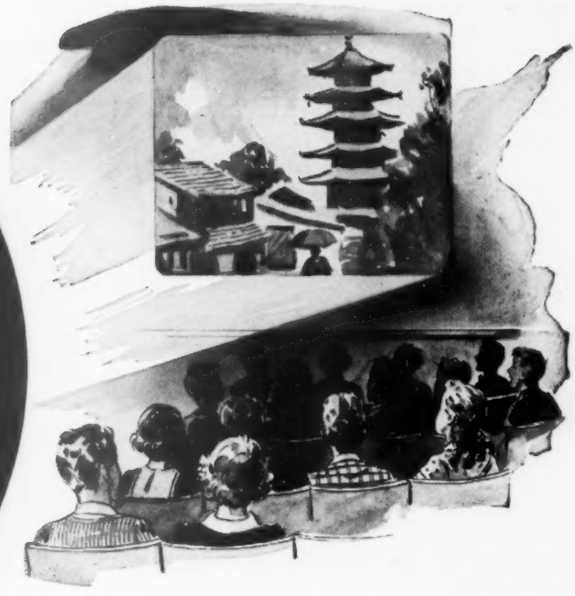

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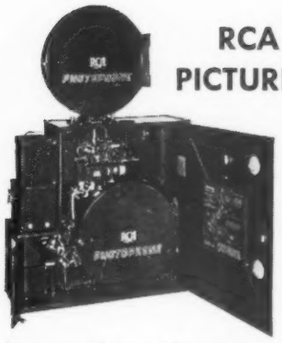
Use of RCA's modern teaching aids means new life in every lesson, plus effectiveness. This equipment gives you a new, fresh method of presenting studies to students.

On this page are shown two of RCA's products designed for schools. They provide true quality performance because they are created by the world's greatest sound recording and reproducing organization. Moreover, they are priced moderately. Full details about these and other fine RCA educational equipments included in the interesting new booklet "Sound Service for Schools"—a copy of which we will mail, free, on request.

RCA presents the "Magic Key of RCA" every Sunday 2 to 3 P.M., E.D.T., on NBC Blue Network



RCA SOUND MOTION PICTURE PROJECTOR, PG-81

...One of RCA's complete line of 35 mm. sound motion picture projectors. Has 900 or 1000 watt incandescent lamp. Ample illumination for average room or auditorium. Has the same RCA Photophone Rotary Stabilizer soundhead used in large motion picture houses all over the country. Assures you the exacting performance that these theatres insist on.

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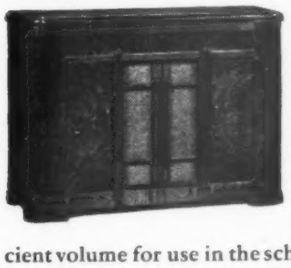


This beautiful instrument fulfills the demand for a combination phonograph-radio of excellent quality at moderate cost. It provides all types of radio programs, domestic and short-wave, and reproduces phonograph records with sufficient volume for use in the school auditorium. Its fine quality is demonstrated by its wealth of superb RCA Victor Radio features, including Magic Voice, Magic Brain, Magic Eye and RCA Metal Tubes. The phonograph features automatic record changer, new inertia tone arm and pick-up, automatic stop, and plays 10 or 12 inch records interchangeably. The cabinet is 34 inches high, 46¾ inches wide and 18½ inches deep, richly finished.

RCA

Sound Service

EDUCATIONAL DEPARTMENT

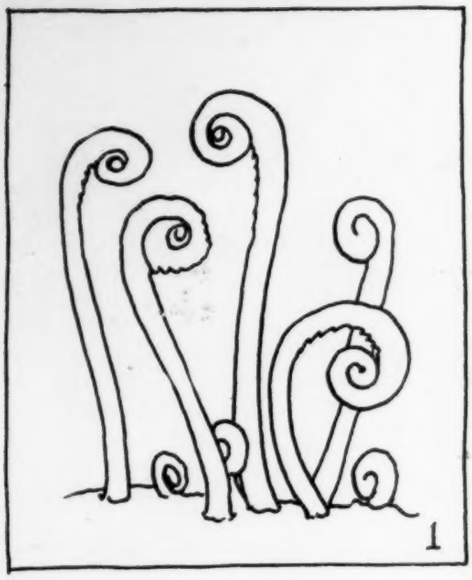
RCA Manufacturing Co., Inc. • Camden, N. J.

A Service of the Radio Corporation of America

How Nature Protects Young Plants and Animals
---In Hand-Made Lantern Slides

By ANN GALE

Art Department, Lindblom High School, Chicago

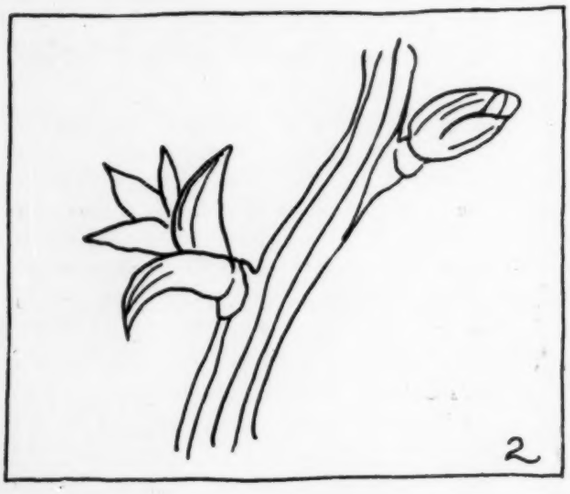


SPRING is a good time for a study of the various ways of protection for young plants and animals in intermediate grades.

In plants the growing tip of the young plant must be protected against cold. With animals, the baby animal must be protected until he can fend for himself.

These six pictures may be traced on slides and projected on the screen as a basis for such a study:

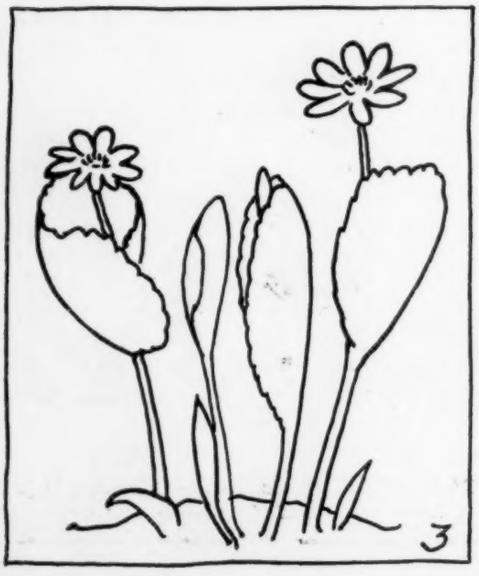
(1) The tightly rolled tips of young ferns.



(2) The protecting bud scales found over the leaves of trees.

(3) The flower of the bloodroot which is tightly wrapped in the leaf.

(4) A mother robin feeding young robins who are not strong enough to get their own food.

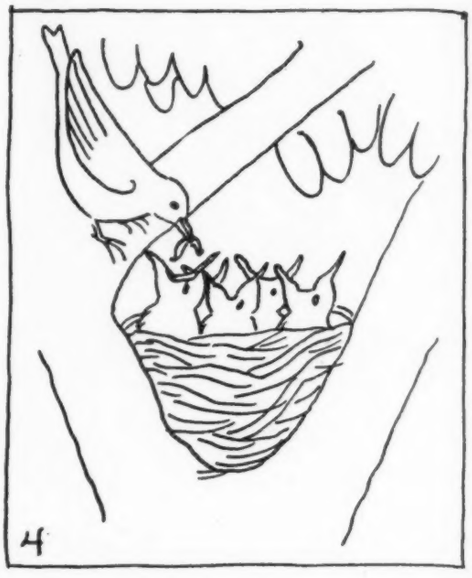


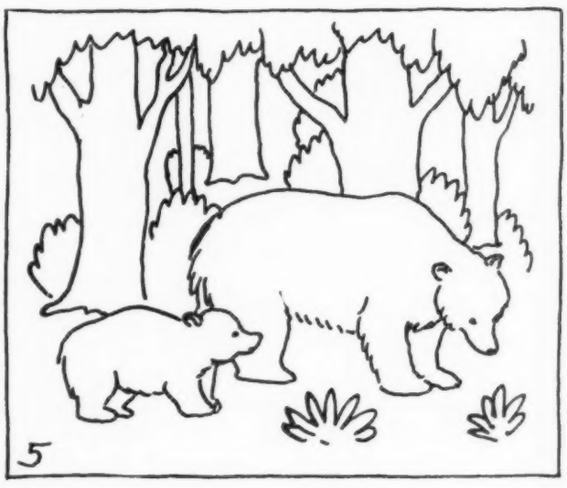
(5) A mother bear and a young cub together foraging for food.

(6) A young kangaroo in his mother's pocket.

Keystone crayons may be used to suggest the natural coloring of the plants and animals.

The simplest type of handmade slide is made by drawing or tracing on finely finished etched glass with ordinary medium lead pencil. Color, by special crayons or inks, enhances the slides greatly. Fine effects are obtained by blending with crayons. About one-third inch margin should be left all around the slide. The slide is readily cleaned with soap or washing powder to receive a new picture.





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How To Construct and Use Star Maps

WITH the reorganization of courses of study for the public schools, science has taken its place along with the traditional subjects, beginning with the first grade and continuing through every grade to the high school. Survey courses in science are popular in universities, and in many teacher-training institutions such science survey courses are mandatory.

One unit which is included in all these survey courses deals with the earth on which we live and with the stars in their courses. To satisfy the natural curiosity of peoeple about the heavenly bodies, there has been a rapid growth of the planetarium idea in this country. It is expected that within a few years a planetarium will be within the reach of every person in the United States. Until such time as the fundamentals of astronomy and the definite first-hand acquaintance of the constellations is the common knowledge of every one, the schools can perform valuable service by teaching about the stars and the star stories to the children. Star maps, star charts, and "guides to the constellations" will prove very helpful in this work.

The directions given below for the construction of star maps, and the recommended technique for their use provide the teachers with usable materials for their activity program in the modern school. This program involves construction work in the classroom and field trip experiences during the observation period.

Making the Star Maps

Materials needed for the construction of the star maps consist of one sheet of oak tag and a box of small gummed stars. The oak tag sheet is approximately 23 x 28 inches in size, large enough to make the cards for eight star maps. The box of small gummed stars contains one hundred stars, which is just about the right number for the star maps to be constructed. These stars may be had in a number of colors, such as silver, gold, blue, red, and green, any of which gives satisfactory results on the map. The oak tag is of such color and texture that it will give a long period of useful service, though any other cardboard material may be used for cards.

The oak tag is prepared for the maps by first cutting a strip two inches wide the long way of the sheet, making it 2 x 28 inches, and then cutting the remainder in to eight equal pieces, each about 7 x 10 inches. The long strip may be used to make a "zodiac band" and the other pieces serve as the cards for the star maps. If a large paper cutter is available it is a simple matter to cut the sheet. Scissors may be used, but are not so satisfactory. Another plan is to secure a board six or eight inches wide and about three feet long, lay the oak tag on the board, and with the yard stick as a guide cut the sheet with an old razor blade. It is best to cut the sheet the long way, giving two equal pieces twenty-eight inches long. Then each strip may be cut into four equal pieces for the final cards. A small paper cutter is usually large enough for this final cutting.

Teachers will see in this construction work opportunities for correlation of the work in science with other subjects, particularly mathematics and art. Extreme accuracy in measurement is necessary if the eight cards are to be exactly the same size. Since the oak tag often runs slightly over the 23 x 28 inch size, it will be necessary to deal in fractions of inches, or trim the card to those dimensions. In any event it requires mathematical considerations to plan the work for the cutting. In the lower grades this might well be one of the major objectives in the process of making the star maps. Art comes into play during the placing of the stars on the cards. Proper spacing is necessary; correct placement of stars must be made; and neatness in sticking the stars, drawing the lines, and lettering the cards all make for artistically finished products. It also serves as a stimulus to the imagination, which is one of the fundamental purposes of art education.

The star maps suggested for the early work in this field are those which stress relationships in such a manner that associations are formed whereby other constellations may be readily identified. The natural starting point is the north star and the circumpolar constellations, followed with those which also have the north star as the point of reference. Consequently, star map number (1) is *The Big Dipper* and the *North*

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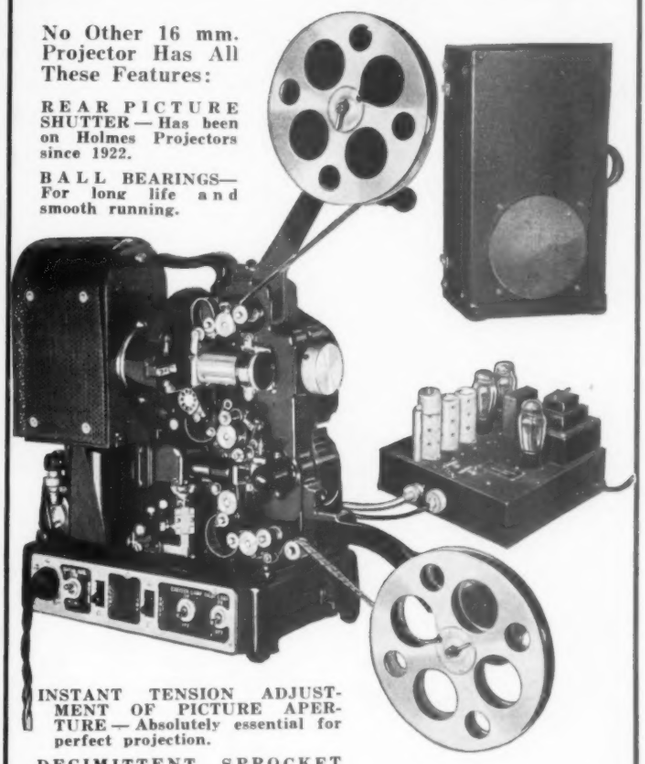

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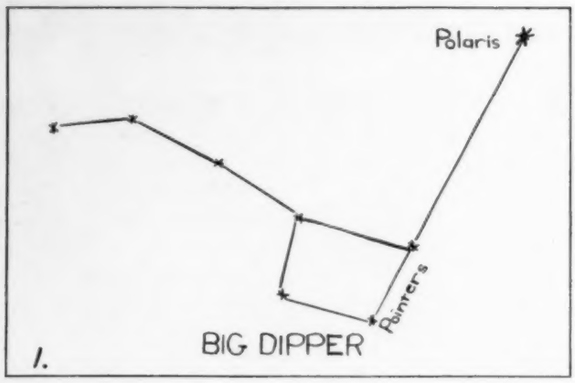
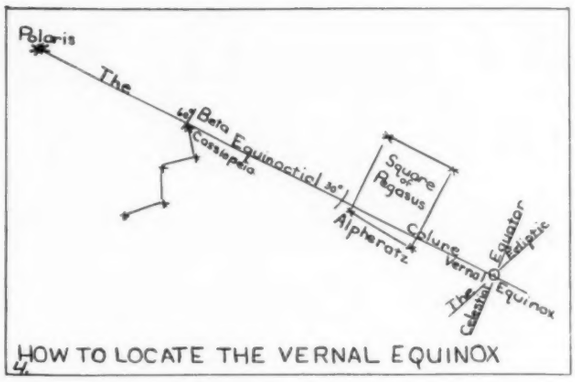
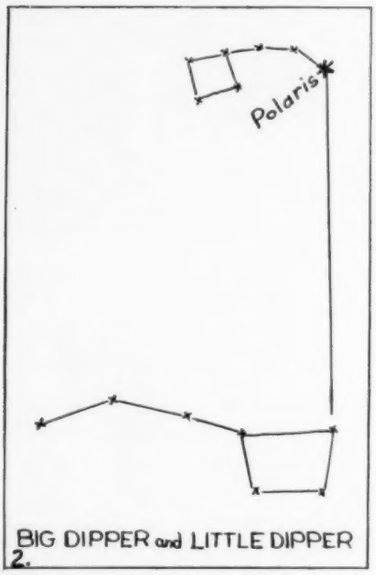
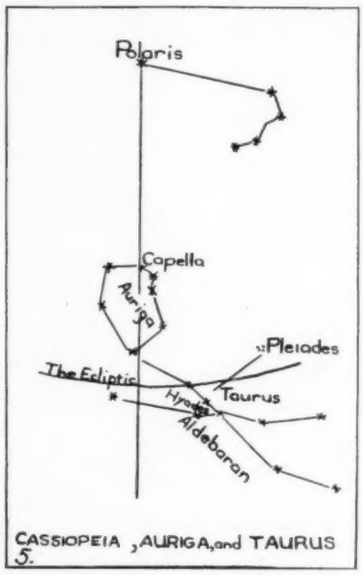
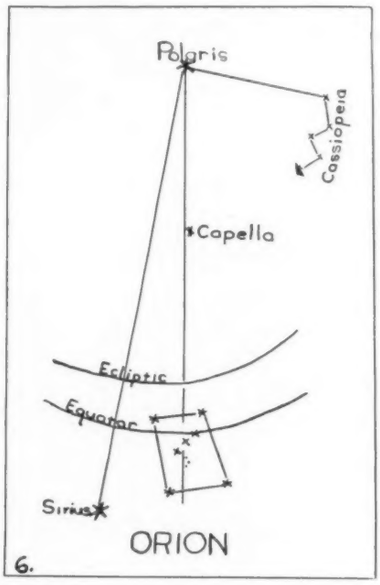
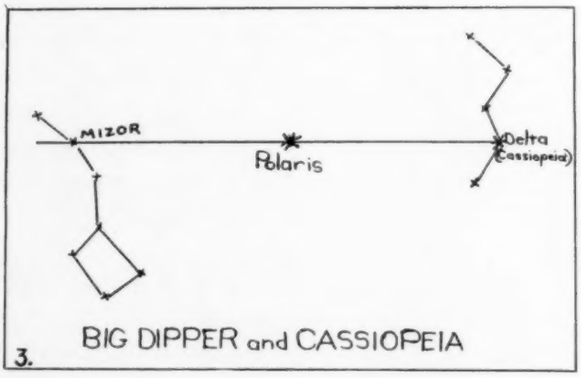


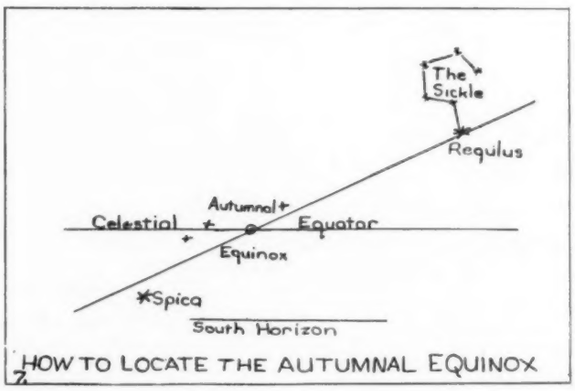






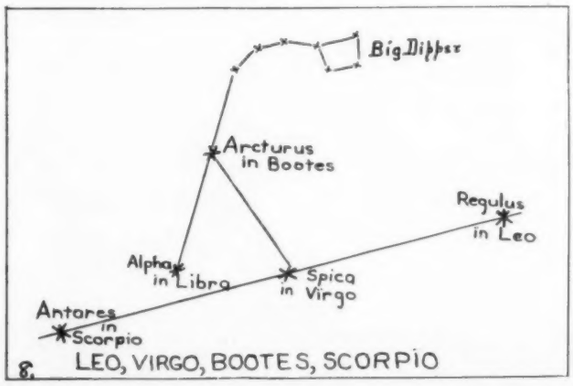






Star, showing the "pointers" directed towards the north star. It can also be used to show that the big dipper revolves about the north star in twenty-four hours, and can be used as the "clock of the sky."

Since the north star (*Polaris*) is the end star in the handle of the *Little Dipper,* a star map showing the relative positions of the *Big Dipper* and the *Little Dipper* form the subject matter for star map number (2), "Big Dipper and Little Dipper." These names are used, rather than "Ursa Major and Ursa Minor," because the dippers constitute only parts of the "Bear" constellations. It will be seen that as the earth rotates on its axis the dippers



appear to revolve about the north star counter clockwise, always holding their relative positions with one another. If either constellation is seen, it is an easy matter to locate the other.

If a line is drawn from the bend in the handle of the *Big Dipper* to the north star, and then projected an equal distance beyond, it will locate the constellation *Cassiopeia*. The star map, number (3), "Big Dipper and Cassiopeia", stresses the relationships existing between these circumpolar constellations. If one constellation is identified, the other can be located readily. It can be shown that both the *Big Dipper* and *Cassiopeia* revolve counter-clockwise about the north star and that either one, or both, may be used as a "clock of the sky".

The vernal equinox is a very important point of reference in astronomical measurements. Spring occurs when the sun arrives at the vernal equinox. To locate the vernal equinox, draw a line (a meridian) from *Polaris* to *Beta Cassiopeia*, (a distance of thirty degrees) then on to *Alpheratz* in the *Square of Pegasus* (another thirty degrees), and extend it another thirty degrees into an open space in the sky. That point will be the approximate position of the vernal equinox, ninety degrees from the north star. This map entitled, "How to Locate the Vernal Equinox", number (4), stresses the relationships between the north star, *Cassiopeia*, the *Square of Pegasus*, and the vernal equinox. Identification of any one makes possible the ready location of the others.

Starting again from the north star and projecting a line through the constellation *Auriga* on to the celestial equator, a number of relationships may be indicated. Chart number (5) points out the positions of *Cassiopeia*, *Auriga*, *Taurus*, and the *Pleiades*.

One of the most brilliant and fascinating constellations of the autumn and winter months is the giant *Orion* majestically marching westward across the southern skies and driving the enraged bull, *Taurus*, backward hour after hour. This constellation is easily located by drawing a line (meridian) from *Polaris* past *Capella* in *Auriga*, and on beyond the celestial equator. *Orion* will be found with the upper star in his belt along the celestial equator, with his faithful hunting dog, *Canis Major*, containing the brightest star of the heavens, *Sirius*, following closely behind him. Star map number (6) entitled, "Orion", shows these relationships.

Autumn begins automatically when the sun is at the autumnal equinox. This point may be located by following the ecliptic three-fifths of the distance from the first magnitude star, *Regulus*, in the sickle of the constellation *Leo*, to *Spica* in the constellation *Virgo*. Since both of these stars are bright, first magnitude stars and as there are few other stars in that immediate vicinity, no difficulty will be experienced in locating with a fair degree of accuracy, the autumnal equinox. Map number (7), "How to Locate the Autumnal Equinox" will be of great assistance in this work.

The last of this series, number (8), is used to locate certain bright, first magnitude stars, starting from the initial point of origin, the *Big Dipper*. It is said that the Century of Progress in Chicago was officially

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opened by light from the star *Arcturus*. This star may be easily located by following southward the swing of the curve of the handle of the *Big Dipper* until the first bright star is encountered. That star, in a fairly starless region, is the first magnitude star, *Arcturus*, in the constellation *Bootes*. A continuation of that line will bring into view certain other first magnitude stars as indicated on the star map, *"Big Dipper, Arcturus, Spica, Antares, Regulus"*.

This series of eight star maps constitutes only a few which can be constructed. They do, however, deal with very prominent star groups seen for a number of months during the year. Other star maps might well assist in locating the constellations favorably placed during the time the unit is being studied. With the experience gained in constructing this small number of maps, it will be easy to make any others desired. Teachers should be certain to keep in mind the desirability of stressing definite relationships between constellations or stars when making the star maps. An isolated constellation on a card will be of little value in attempting to locate the heavenly bodies when on the field trip.

It would be well to have an observation period before the actual work of constructing the star maps. This would serve as a stimulus and create a desire on the part of the children to make the maps. It is a good plan for the teacher to construct a set of the maps to find the problems the children are likely to encounter in their work. The set made by the teacher may be used as a standard of excellency for the children's finished products. The teacher might well place the diagrams in an enlarged form on a wall chart, having all the groups on the one chart. One way to do this is to draw the figures on a strip of unbleached muslin, say thirty-six inches wide by about sixty or seventy-two inches long, with colored crayon. All members of the class could view this at the same time during their construction work. The "zodiac band" may be made by drawing a line to represent the ecliptic in the middle of the two inch strip and its full length, then marking off spaces every two inches to form the areas for the twelve zodiacal constellations. The constellation figures may then be put in these spaces, along with the symbols and names of the signs of the zodia. The months and dates for the signs may also be noted in these spaces. Since the strip is twenty-eight inches long, four inches may be usd to lap over to hold the band in a circular form.

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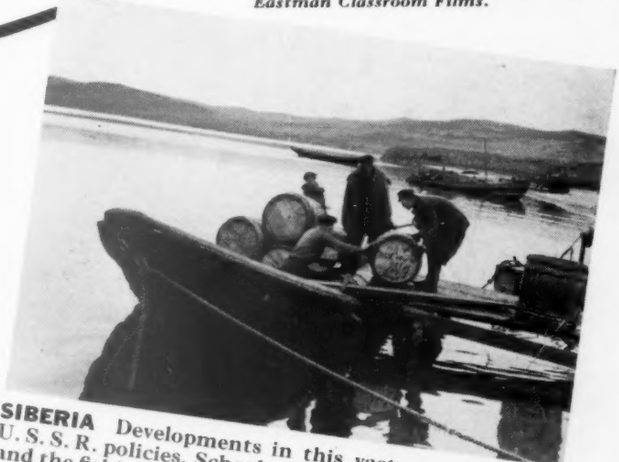

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the approximate positions, then shift them about until they look like the diagram on the chart, and then sticking them on the card, rather than measuring the distances and drawing the form beforehand. The lines can be readily drawn in after the stars are stuck to the cards. Use a cloth or a handkerchief in pressing the moistened star to the card to avoid a smear around the star on the card. Draw the lines in ink to avoid the smearing of the lines when the cards are in use. This latter exercise gives experience in ruling with ink.

How to Use the Star Maps

Before going on the field trip, it would be well for the children to know the names of the stars and the constellations to be studied. They must know also that the star maps are so constructed that it is necessary to hold them over the head to get the true relationships when viewing the stars.

There are several ways of using the star maps on the field trip. One way is for the teacher to make a demonstration, using the focusing flash light pointed toward the stars in the constellation. Then the pupils may look at the star map to identify the objects indicated by the teacher. After a few such demonstrations the pupils can very easily pick out the other constellations by using their maps. Pupils may be called on to demonstrate in place of the teacher. Misunderstandings may be cleared up by referring to the maps and then using the flash light to trace out the stars and star groups.

One way to firmly fix the constellations and their relative positions clearly in mind is to tell the star stories and legends as the observation progresses. For example, *Taurus* is always to the west of *Orion*. This can be remembered from the legend which states that in his fight with the huge bull, *Orion* was victorious and now drives the charging bull westward, while his huge hunting dog, *Sirius*, follows faithfully behind.

In the classroom pupils may review the field trip lesson by using the star maps and telling the stories of the constellations and stars contained thereon. Children might be asked to mark out the constellations on the floor or blackboard, then check their work for accuracy by using the star map. The map contains items which will call for reading and study in order to understand all the implications in it.

After a little practice and some further instructions the pupils may find great pleasure in going out by themselves, or in small groups in their own neighborhood and studying the constellations. The star maps will make them independent of the teacher in this work and they can study the stars as often as they choose. They may wish to make additional maps when their fund of knowledge grows beyond the small set of eight.

The construction of the maps will assist in developing certain skills, habits of work and neatness, stimulate the imagination, and promote understandings. Their use may lead to the acquisition of wholesome interests which might cause wide reading and culminate in a life-long hobby. Teachers who grasp this opportunity for an integrated project will be opening up broad avenues to the wonders of immediate and remote environment of daily life.

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It is easy to choose the right screen for any school requirement when you select from the Da-Lite line. Here you will find the world's largest assortment of models and sizes, ranging in price from $2.50 up. Surfaces are glass-beaded unless white or silver is requested. See at your dealer's. Write for catalogue and new low prices now! Da-Lite Screen Co., Inc., 2717 No. Crawford Ave., Chicago, Ill.

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AMONG THE PRODUCERS *Where the commercial firms announce new products and developments of interest to the field.*

The New Leitz VIII-S Projector

With simple, "one shot" methods of color photography coming more and more into prominence for amateur use greater emphasis has lately been placed on projection, the method by which color transparencies such as Kodachrome or Dufaycolor can be enjoyed. In addition, the projection of black and white studies reveals details and depths of tones unsuspected in a paper print.

For the proper projection of color transparencies a projector must meet certain requirements. The screen image must be brilliant and sharp, and the ventilation such that in normal use the delicate colors of the transparency are not destroyed by the heat. The new Leitz VIII-S Projector (made by the makers of the Leica Camera) was designed with these considerations in mind and while it gives a brilliant image for use with moderately large gatherings it is also adaptable for home use. It employs a 250-watt bulb which, because of the projector's unique system of condensers, gives a greatly increased screen illumination over projectors of a comparable wattage.

The VIII-S Projector is versatile in that it will project single frame filmslides, Leica double frame filmslides, or 2 x 2 inch glass slides. These latter are usually employed with color transparencies.

The gate for the positive film strips has spools to which the film is clipped. After a strip of positive film has been run through the projector it is merely slipped off the take-up spool. To insert the film in the gate the latter opens up and the film is inserted. Scratching is prevented by a novel arrangement that releases the glass pressure plates before the film spool is turned. Interchanging of the gates for 2 x 2 inch glass slides and positive film strips has been reduced to extreme simplicity, for all that is necessary is to turn a lever, and the one gate is merely lifted off the projector to interchange with the other.

The New Leitz Projector

The entire construction of the VIII-S Projector is such that the maximum illumination possible is obtainable. External adjustments allow the lamp to be moved sidewise or forward and backward, to place it in correct optical alignment. The lamp housing design provides excellent ventilation, one of the main features being internal removable condensers mounted separately. The external condenser is also interchangeable.

New projection lenses are available for the Leitz VIII-SProjector, complete information on which may be had by writing to E. Leitz, Inc., 730 Fifth Avenue, New York, N. Y.

Coronation Pictures in 16 mm.

A striking development of modern visual education is found in the authentic 16mm motion pictures of England's Coronation just announced by Pathegrams of Rockefeller Center, New York. These films, of especial interest to teachers of history and social science, will be available in both silent and sound versions and in a variety of lengths for use before the end of this school year.

The longer editions will include with the pictures of the Coronation, taken from preferred official positions, an historically accurate presentation of British royalty since 1900, making them especially valuable for school film libraries.

These pictures will be available at a reasonable price so that schools will be able to afford this means of studying the most colorful pageant of modern history in the making.

Central Doubles Size of Catalog

The Central Camera Company, 230 South Wabash Avenue, Chicago, have enlarged the size of their new catalog 100%. In this latest camera catalog, Central has included numberless new importations in cameras and accessories for the professional and amateur photographer, as well as listing the latest domestic merchandise, all at unusually attractive prices. Many interesting bargains in used equipment are also included, and each one bears the Central "OK" tag which guarantees the camera mechanically and includes the Central guarantee of satisfaction or your money back within ten days. A free copy may be secured upon request.

Ray-Bell Film-Ad Productions

Heading an imposing list of national advertisers, Ray-Bell Films, Inc., announces the release of four special Alka-Seltzer films. For these productions, Ray-Bell Films brought the famous radio act—"Uncle Ezra and The Hoosier Hot Shots," from Chicago. The films were made in color, using the new Cinecolor process, and in actual sound.

Other national advertisers for whom Ray-Bell Films has made pictures recently include: Dr. West Toothbrushes, Pepsodent, Dreft, John Deere, Ford, Chevrolet, Campana-Listerine, Minneapolis-Moline Power Implement Company, and the International Harvester Company. Another large advertiser signed by Ray-Bell Films last week was the Pure Oil Company whose contract calls for a series of 26 different films with several in color.

THE FILM ESTIMATES

Being the Combined Judgments of a National Committee on Current Theatrical Films
(A) Discriminating Adults (Y) Youth (C) Children
Date of mailing on weekly service is shown on each film.
(The Film Estimates, in whole or in part, may be reprinted only by special arrangement with The Educational Screen)

California Straight Ahead (John Wayne) (Univ) After much slow, unimpressive action by truck-driving hero and others, story culminates in race between motor caravan and freight train, struggling through mountain snows to carry important cargo to West Coast. Some picturesque spots. A feeble romance included. 5-4-37
(A) Mediocre (Y) (C) Perhaps

Call It a Day (Ian Hunter, Frieda Inescourt) (War) Light, domestic comedy of springtime romance with outstanding cast, sprightly dialog, deft direction. Brazen love-chasing by emotional females. Adult opinion will vary from whimsical and amusing, to overdone and silly. Perhaps a good "horrible example" for youth. 5-4-37
(A) **Very good of kind** (Y) Doubtful (C) Slight int.

Can This Be Dixie? (Jane Withers, Slim Summerville) (Fox) Episodic series of struggles to keep addle-pated, poverty-stricken Southern colonel's estate out of sheriff's hands by dubious methods. Jane Withers as blatant, oversmart child dominates all. Picturesque in spots but mostly preposterous. 4-13-37
(A) Stupid (Y-C) No value

Carnival in Flanders (La Kermesse Heroique) (French prod., English titles) Outstanding costume comedy brings to life imaginary episode in 17th Century Flanders. Wives heroically ignore terror-stricken men, turn horror of Spanish invasion into hilarity by feminine methods. Merrily sophisticated masterpiece. 4-27-37
(A) **Excellent** (Y) Doubtful (C) Beyond them

Clarence (Roscoe Karns, Eleanor Whitney, Eugene Pallette) (Para.) Good screening of Tarkington's whimsical story of hero, a timid and unknown genius, plopped into position with a hysterical family where he becomes invaluable. Class B, but lively and amusing in action, dialog and character. 4-13-37
(A) **Good** (Y) **Very good** (C) **Good**

The Crime Nobody Saw (Lew Ayres, Eugene Pallette) (Para.) Mediocre murder tale, poor in direction, acting and dialog, incredible action and artificial situation. Three would-be playwrights, hired to write, are devoid of ideas till a crime under their very noses supplies necessary plot. 4-13-37
(A) Mediocre (Y) Perhaps (C) No

Criminal Lawyer (Lee Tracy, Margot Grahame) (RKO) Hero lawyer, partner of racketeers and politicians, tricks justice, burlesques court procedure, and almost wins governorship. Wins street-walker heroine instead. Sordid motives and gangster ethics rule. Hero's mawkish oratory and breezy swagger overdone. 4-20-37
(A) Poor (Y) Unwholesome (C) No

East Meets West (George Arliss and English cast) (GB) Costume melodrama of rum-running, romance, intrigue, with Arliss doing "Green Goddess" role with sly gusto. Oriental sultan of small domain plays emissaries of rival nations against each other to win huge loan from each. Undesirable elements. 4-13-37
(A) Good of kind (Y) Doubtful (C) No

Fifty Roads to Town (Don Ameche, Ann Sothern) (Fox) Farce comedy of mistaken identities and amusing complications. Hero is taken for gangster by heroine and police who capture him after comic shooting siege. Some padding, illogical and dubious elements, but capable cast makes it pretty good fun on the whole. 4-27-37
(A) Rather amusing (Y) Perhaps (C) No

Good Old Soak (Wallace Beery, Janet Beecher) (MGM) Well-acted screening of Don Marquis' glorified drunkard, "The Old Soak", retaining genuine comedy and human appeal, but heavy-drinking, good-hearted father is too slovenly, boorish and crude to accord convincingly with his supposed environment. 4-27-37
(A) Good of kind (Y) Doubtful (C) No

Girl Overboard (Gloria Stuart, Walter Pidgeon) (Univ.) Well-knit little murder mystery. Crime committed as ship sails, fire at sea destroys evidence, but clever district attorney finds more and a fine heroine for wife as well. Suspense well maintained. Quite above average Class B picture. 4-20-37
(A) Good of kind (Y) **Good** (C) Hardly

A Greater Promise (Russian prod.) (Amkino) Day-to-day life of pioneers in autonomous Jewish republic of Birobidjan, Soviet solution for racial problem. Outstanding acting by Moscow Art Theatre and Kamorny artists. Didactic, interesting, often amusing. Chalky photography and illegible sub-titles are flaws. 4-13-37
(A) Dep. on taste (Y-C) Probably no interest

Her Husband Lies (Ricardo Cortez, Gail Patrick) (Para.) Expertly done picture making very glamorous the suave, sinister career of big-time gambling hero, his pseudo-heroism in "saving" his kid brother, also an addict. Women weep but game goes on till bullet stops the hero. 4-13-37
(A) Dep. on taste (Y-C) Very unwholesome

Internes Can't Take Money (Stanwyck, McCrea) (Para.) Medical ethics and gangsterism combined in finely acted, sensational drama. Gang leader owes life to interne-hero and helps him find heroine's daughter, hidden by ex-husband. Character values distorted, ethics scrambled, racketeers glorified. 4-27-37
(A) Good of kind (Y) Better not (C) No

Laughing at Trouble (Jane Darwell) (Fox) Pleasing portrayal of small-town life and people with assorted characters providing simple humor and drama. Kindly spinster-newspaper-publisher skillfully manoevers affairs and people, and successfully proves innocence of youth falsely accused of murder. 4-27-37
(A) Perhaps (Y) Fairly good (C) Mature

Melody for Two (James Melton, Patricia Ellis) (War) Ordinary mixture of swing, jazz, cafe life, and petty wranglings of dance-bands. Over-self-satisfied hero, provoked into breaking contract, is barred from engagements until difficulties are smoothed out by heroine. Only features, Melton's songs and comedy bits. 5-4-37
(A) Mediocre (Y) Perhaps (C) Hardly

Midnight Taxi (Brian Donlevy, Frances Drake) (Fox) Above average Class B thriller. G-man hero, posing as taxi-driver, gains confidence of gansters and of heroine involved with them, until final round-up puts violent end to huge counterfeiting racket. Exciting smashes and chases throughout. 4-20-37
(A) Perhaps (Y) Good of kind (C) Doubtful

Mountain Justice (J. Hutchinson, Geo. Brent) (War.) Harrowing, well-acted melodrama, inspired by recent headlines, depicting hill-billy ignorance and intolerance. In self defense, fine heroine kills her brutally inhuman father, and narrowly escapes lynching. Good comedy roles lighten grim proceedings somewhat. 4-27-37
(A) Depends on taste (Y) No (C) No

Murder Goes to College (Marsha Hunt, Lynn Overman) (Para) Disagreeable mystery, with college-professor suspects mixed up with racketeers and gambling. Mercenary, wisecracking sleuth, without job, solves crime and shows up police. Lively action, humorous dialog, good roles by Overman and Karns as alcoholic pal. 5-4-37
(A) Hardly (Y) Better not (C) No

Park Avenue Logger (Geo. O'Brien, Beatrice Roberts) (RKO) Vigorous, healthy little yarn about lumber-king's son, thought by father to be high-brow sissy, known to audience as wrestling champion. At father's camp for toughening, he detects crook management and saves father's interests in smashing style. 4-20-37
(A) Hardly (Y) **Good** (C) Probably good

Revolutionists (Russian, with English titles) (Amkino) Sincere, convincing story of actual growth of revolution from Czarist terrorism of '96 through bloody climax of 1905. Some naivete still, but notably good photography, acting and narrative. Avoids raucous sound, dragging tempo, and overdone close-ups. 5-4-37
(A) **Good** (Y) (C) Doubtful interest or value

River of Unrest (John Loder) (G-B) Seething Irish-rebellion melodrama with usual patriot guns, government tanks, ambushes, secret meetings, killings in the dark, etc. Mysterious Irish leader, heroine's brother incognito, finally killed by hero who still manages to marry the heroine! Grim and confused. 4-20-37
(A) Mediocre (Y-C) Little interest, less value

Romance and Riches (Cary Grant, Mary Brian) (Gr Natl) Exaggerated, highly incredible Oppenheim story of ultra-rich hero bored by luxury, goaded to earn his way incognito for a year. He carries through, sows princely gifts secretly among deserving poor, and wins humble heroine and happiness. Main idea wholesome. 5-4-37
(A) Mildly amusing (Y) **Good** (C) Perhaps

Shall We Dance (Fred Astaire, Ginger Rogers) (RKO) Another typical concoction, hardly equal to their previous ones, with music, notable dancing, spectacular sets, and good comedy by E. E. Horton. Mild sophistication achieved by ship-board rumor that the innocent pair is married. Considerable "sameness" will be felt. 5-4-37
(A) Good of kind (Y) Doubtful value (C) Hardly

That Man's Here Again (Hugh Herbert, Tom Brown, Mary Maguire) (Warner) Feeble jumble of farce, romance, and old-style melodrama about boy, girl, and an adorable baby. Chief role by Herbert as amiable alcoholic whose artful trickery helps bring happiness to the three others. 4-20-37
(A) Hardly (Y) Doubtful (C) No

Thunder in the City (Edward G. Robinson) (Columbia) American super-salesman supposed to stampede London by high-pressure ballyhoo into stock-buying in new metal discovery. He wins heroine when bubble bursts. Impossibility made breezily real. Harmless and lively fun if taken as hilarious exaggeration. 5-4-37
(A) Fair (Y) **Good** (C) Perhaps

Twenty-Three and a Half Hours Leave (J. Ellison) (Grand Nat.) Breezy farce about doughboys in camp. Rollicking fun, slapstick, song sequences, as cocky sergeant hero wins wager that he will breakfast with the general, and wins his daughter also for good measure. 4-13-37
(A) Perhaps (Y) **Amusing** (C) Probably good

Wake Up and Live (Winchell, Bernie, Faye, Jack Haley, Patsy Kelly, Ned Sparks, Catlett) (Fox) Hilarious farce comedy at its best. Winchell-Bernie feud and Kelly-Sparks wisecracks deftly woven into plot centered on hunt for "phantom troubadour", whose voice, accidentally on air, starts frantic complications. 4-20-37
(A-Y) **Excellent of kind** (C) Probably amusing

When Love is Young (Virginia Bruce, Kent Taylor) (Univ.) Colorless version of trite theme. Plain small-town girl of humble family, snubbed by classmates, is made into beautiful Broadway star by clever press-agent, and gets to even up old scores. Chief asset is deft character role by Walter Brennan. 4-27-37
(A) Fair (Y) Prob. good (C) Little interest

The Woman I Love (Paul Muni, Miriam Hopkins) (RKO) Unsympathetic leading roles and old, overdone Great War details mar this serious triangle story. Muni hated as jinx by fellow-airmen. His adored wife in love with youth in same squadron. Depressing mess solved by youth's death! Waste of Muni-Hopkins. 4-20-37
(A) Disappointing (Y) Unwholesome (C) No

Woman Wise (Rochelle Hudson, Michael Whalen) (Fox) Vigorous sports-editor, with real humanity in his make-up, fights outrageous use of old fighters by ring racketeers, even risking his own reputation to win his cause and the peppery heroine. Elementary stuff of wholesome effect as a whole. 4-13-37
(A) Hardly (Y) Fairly good (C) Doubtful

You're in the Army Now (Wallace Ford, Grace Bradley) (G-B) Mediocre film, rambling plot about smart-aleck, illiterate American grafter who lands inadvertently in British Army. Comedy values marred by cheap action and dialog, and totally unappealing hero who achieves heroic death fighting Chinese bandits. 4-27-37
(A) Mediocre (Y) No (C) No

HERE THEY ARE

A Trade Directory for the Visual Field

FILMS

Bell & Howell Co. (6)
1815 Larchmont Ave., Chicago
(See advertisement on inside back cover)

Bray Pictures Corporation (3, 6)
729 Seventh Ave., New York City

Eastin 16 mm. Pictures (6)
(Rental Library) Davenport, Ia.
(See advertisement on page 166)

Eastman Kodak Co. (1, 4)
Rochester, N. Y.
(See advertisement on outside back cover)

Eastman Kodak Co. (1, 4)
Teaching Films Division
Rochester, N. Y.
(See advertisement on page 167)

Eastman Kodak Stores, Inc. (6)
1020 Chestnut St., Philadelphia, Pa.
606 Wood St., Pittsburgh, Pa.

Edited Pictures System, Inc. (6)
330 W. 42nd St., New York City

Films, Inc. (5)
330 W. 42nd St., New York City
19 S. LaSalle St., Chicago
925 N. W. 19th St., Portland, Ore.

Garrison Film Distributors (3, 6)
730 Seventh Avenue, New York City
(See advertisement on page 166)

Walter O. Gutholn, Inc. (5)
35 W. 45th St., New York City
(See advertisement on page 169)

Harvard Film Service (3, 6)
Biological Laboratories,
Harvard University, Cambridge Mass.

Guy D. Haselton's Travelettes
7901 Santa Monica Blvd., Hollywood, Cal. (1, 4)

Ideal Pictures Corp. (3, 6)
28 E. Eighth St., Chicago, Ill.
(See advertisement on page 162)

Institutional Cinema Service, Inc. (3, 6)
130 W. 46th St., New York City

The Manse Library (4, 5)
2439 Auburn Ave., Cincinnati, O.
(See advertisement on page 166)

Pathegrams, Inc. (6)
Rockefeller Center, New York City
(See advertisement on page 141)

Pinkney Film Service Co. (1, 4)
1028 Forbes St., Pittsburgh, Pa.

United Projector and Films Corp. (1, 4)
228 Franklin St., Buffalo, N. Y.

Universal Pictures Corp. (3)
Rockefeller Center, New York City
(See advertisement on page 168)

Visual Education Service (6)
131 Clarendon St., Boston, Mass.

Wholesome Films Service, Inc. (3, 4)
48 Melrose St., Boston, Mass.

Williams, Brown and Earle, Inc. (3, 6)
918 Chestnut St., Philadelphia, Pa.

MOTION PICTURE MACHINES and SUPPLIES

The Ampro Corporation (6)
2839 N. Western Avenue, Chicago
(See advertisement on page 144)

Bell & Howell Co. (6)
1815 Larchmont Ave., Chicago
(See advertisement on inside back cover)

Central Camera Co. (6)
230 S. Wabash Ave., Chicago
(See advertisement on page 166)

Eastman Kodak Co. (4)
Rochester, N. Y.
(See advertisement on outside back cover)

Eastman Kodak Stores, Inc. (6)
1020 Chestnut St., Philadelphia, Pa.
606 Wood St., Pittsburgh, Pa.

General Films Ltd. (3, 6)
1924 Rose St., Regina, Sask.

Herman A. DeVry, Inc. (3, 6)
1111 Armitage St., Chicago
(See advertisement on page 161)

Holmes Projector Co. (3, 6)
1813 Orchard St., Chicago
(See advertisement on page 163)

Ideal Pictures Corp. (3, 6)
28 E. Eighth St., Chicago.
(See advertisement on page 162)

International Projector Corp. (3, 6)
90 Gold St., New York City
(See advertisement on inside front cover)

The Photoart House (6)
844 N. Plankinton Ave., Milwaukee, Wis.
(See advertisement on page 165)

RCA Manufacturing Co., Inc. (5)
Camden, N. J.
(See advertisement on page 159)

S. O. S. Corporation (3, 6)
636 Eleventh Ave., New York City

Sunny Schick, National Brokers (3, 6)
407 W. Wash. Blvd., Ft. Wayne, Ind.

United Projector and Films Corp. (1, 4)
228 Franklin St., Buffalo, N. Y.

Universal Sound System, Inc. (2, 5)
Allegheny Ave., at Ninth St.
Philadelphia, Pa.

Victor Animatograph Corp. (6)
Davenport, Iowa
(See advertisement on page 143)

Visual Education Service (6)
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PICTURES and PRINTS

Colonial Art Company
1336 N. W. First St., Oklahoma City, Okla.

The Photoart House
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(See advertisement on page 165)

SCREENS

Da-Lite Screen Co.
2717 N. Crawford Ave., Chicago
(See advertisement on page 169)

Eastman Kodak Stores, Inc.
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SLIDES and FILM SLIDES

Conrad Slide and Projection Co.
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Eastman Educational Slides
Johnson Co. Bank Bldg.,
Iowa City, Ia.

Edited Pictures System, Inc.
330 W. 42nd St., New York City

Ideal Pictures Corp.
28 E. Eighth St., Chicago, Ill.
(See advertisement on page 162)

Keystone View Co.
Meadville, Pa.
(See advertisement on page 146)

Radio-Mat Slide Co., Inc.
1819 Broadway, New York City
(See advertisement on page 166)

Society for Visual Education
327 S. LaSalle St., Chicago, Ill.
(See advertisement on page 169)

Spencer Lens Co.
19 Doat St., Buffalo, N. Y.
(See advertisement on page 163)

Visual Education Service
131 Clarendon St., Boston, Mass.

Visual Sciences
Suffern, New York
(See advertisement on page 166)

Williams, Brown and Earle, Inc.
918 Chestnut St., Philadelphia, Pa.

STEREOGRAPHS and STEREOSCOPES

Herman A. DeVry, Inc.
1111 Armitage St., Chicago
(See advertisement on page 161)

Keystone View Co.
Meadville, Pa.
(See advertisement on page 146)

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General Films Ltd.
1924 Rose St., Regina, Sask.

Keystone View Co.
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REFERENCE NUMBERS

(1) indicates firm supplies 35 mm. silent.
(2) indicates firm supplies 35 mm. sound.
(3) indicates firm supplies 35 mm. sound and silent.
(4) indicates firm supplies 16 mm. silent.
(5) indicates firm supplies 16 mm. sound-on-film.
(6) indicates firm supplies 16 mm. sound and silent.

Continuous insertions under one heading, $1.50 per issue; additional listings under other headings, 75c each.